



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/923,497 | 08/06/2001 | Arthur J. Carlson | 13144US01 | 2287 |

23446 7590 12/24/2003

MCANDREWS HELD & MALLOY, LTD
500 WEST MADISON STREET
SUITE 3400
CHICAGO, IL 60661

EXAMINER

CHEN, ALAN S

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2182

DATE MAILED: 12/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/923,497

Applicant(s)

CARLSON, ARTHUR J.

Examiner

Alan S Chen

Art Unit

2182

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/13/2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

EXAMINER'S AMENDMENT

Response to Arguments

1. Applicant's arguments, see page 5 of applicant amendment, filed 11/13/2003, with respect to claims 11 and 12 have been fully considered and are persuasive. The 35 U.S.C. 112 rejection of claims 11 and 12 has been withdrawn.

2. Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 1-17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The applicant uses the term "circuitry" in his specification to describe components of his invention at the functional, black box level, giving no specifics into details as how the circuitry operates to perform the particular function, e.g., determining the conditions of an operating environment. In addition, applicant does not give the components of the circuitry, e.g., how discrete elements such as resistors, capacitors, or higher level fundamental circuitry, e.g., specific types of integrated circuits, etc., are integrated to perform the function of the circuit to allow one skilled in the art to make/and or use the invention.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 7, 9-13, 16, 17 and 21 is rejected under 35 U.S.C. 102(b) as being anticipated by No. 5,955,917 to Mandell et al. (hereafter Mandell).

7. As per claim 7, Mandell discloses a communication system (Fig. 1) comprising: a communication node (Fig. 1, element 20) having circuitry adapted to determine an operating environment (Fig. 1, element 25 and 28) of the communication node; and a management information node (Fig. 2, element 22) adapted to control the communication node based on the operating environment and a plurality of stored PRBS generator definitions (Fig. 10, element 21).

8. As per claims 9 and 10, Mandell discloses claim 7, wherein the circuitry (Fig. 2, element 20 being embedded with the processor, all being considered the circuitry) to includes measurement circuitry/processor (the processor being a measuring circuitry, e.g., computing time, states and values related to the channel such as the total power signal or the phase shift).

9. As per claim 11, Mandell discloses claim 7, wherein the operating environment comprises a one channel condition (the noise of the channel that the multicarrier traffic is experiencing into Fig.2, part of the reason why amplification is done, is in and of itself a channel condition).

Art Unit: 2182

10. As per claims 12 and 17, Mandell discloses claim 7, wherein the operating environment comprises a preselected criterion (Column 4, lines 31-43, summation of the known pseudorandom noise sequence with the multicarrier traffic signal, hence comprising the preselected criterion of the known pseudorandom noise sequence). The preselected criterion is programmed in by an user of the system, hence qualifies as selected definitions generated by the user.

11. As per claim 13, Mandell discloses claim 7, wherein said plurality of PRBS generator definitions are stored on said management information node (Mandell describes how all of the circuitry, Fig. 2, element 20, can be embedded on the processor).

12. As per claim 16, Mandell discloses claim 7, wherein the management information node comprises a management information base (simply defined by applicant as something that controls communication system operation, e.g., the processor in Fig. 10, element 28).

13. As per claim 21, Mandell discloses a method of communication (Fig. 2) comprising determining a number of carriers to be used by a communication node (the multicarrier traffic has a specific power signature based on the number of carrier signals inputted). Based on the power measurements, the selection circuit determines which generator to use (Columns 1 and 2 pertaining to Summary of Invention).

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 1-6, 8, 14, 15 and 18-20 are rejected under 35 USC 103(a) as being unpatentable over Mandell in view of No. 5,034,906 to Chang et al. (hereafter Chang).

16. As per claims 1 and 18, Mandell discloses a communication system capable of handling multicarrier traffic (background of Mandell) comprising a plurality of pseudorandom noise generator definitions (Fig. 2, elements 21a-c, note, pseudorandom binary sequence definitions are a subset of pseudorandom noise generator definitions); and circuitry adapted to determine the operating environment of the communication system (or communication node, represented by Fig. 2, element 20), and to select one of the plurality of pseudorandom generator definitions based on the operating environment (Fig. 2, element 22). The selected definition is ultimately used to determine the optimal operating point of the communication system amplifier (Column 6, lines 12-20). Mandell further discloses the entire circuitry (Fig. 2, element 20) can be embedded with the processor (Column 4, lines 19-30), inherently implying the existence of storage in the form of memory.

Mandell does not disclose expressly having memory that stores the plurality of PRBS generator definitions.

Chang discloses a fundamental PRBS memory structure (Fig. 8) composed of D flip-flops combined to produce a register type memory structure typical of those that exist within a processor.

Mandell and Chang are analogous art because they are from the same field of endeavor in pseudorandom noise sequence generation.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to combine Chang with Mandell to implement the memory storage structure needed to store pseudorandom noise sequence generator definitions.

The suggestion/motivation for doing so would have been that it is the typical way to implement/store PRBS generator definitions (Column 4, lines 39-55) in a system. With the generators definitions embedded into the processor as described by Mandell, other chains of D-Flip Flops would therefore store the other PRBS generator definitions.

Therefore, it would have been obvious to combine Mandell with Chang for the benefit of a fundamental memory structure that is used to store a plurality of PRBS generator definitions.

17. As per claims 2-4, Mandell further discloses claim 1, wherein the circuitry (Fig. 2, element 20 being embedded with the processor, all being considered the circuitry) to include the memory, processor (the processor being a measuring circuitry, e.g., computing time, states and values related to the channel such as the total power signal or the phase shift).

18. As per claims 5 and 19, Mandell further discloses claims 1 and 18, respectively, wherein the operating environment comprises a one channel condition (the noise of the channel that the multicarrier traffic is experiencing into Fig.2, part of the reason why amplification is done, is in and of itself a channel condition).

19. As per claims 6 and 20, Mandell further discloses claims 1 and 18, respectively, wherein the operating environment comprises a preselected criterion (Column 4, lines 31-43, summation of the known pseudorandom noise sequence with the multicarrier traffic signal, hence comprising the preselected criterion of the known pseudorandom noise sequence).

Art Unit: 2182

20. As per claims 8, 14 and 15, Mandell discloses the communication system of claim 7 comprising the PRBS generator communicating with at least the management information node (Fig. 2, element 21 inputted into Fig. 2, element 22).

Mandell does not disclose expressly having memory that stores the plurality of PRBS generator definitions.

Chang discloses a fundamental PRBS memory structure (Fig. 8) composed of D flip-flops combined to produce a register type memory structure typical of those that exist within a processor.

Mandell and Chang are analogous art because they are from the same field of endeavor in pseudorandom noise sequence generation.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to combine Chang with Mandell to implement the memory storage structure needed to store pseudorandom noise sequence generator definitions.

The suggestion/motivation for doing so would have been that it is the typical way to implement/store PRBS generator definitions (Column 4, lines 39-55) in a system. With the generators definitions embedded into the processor as described by Mandell, other chains of D-Flip Flops would therefore store the other PRBS generator definitions.

Therefore, it would have been obvious to combine Mandell with Chang for the benefit of a fundamental memory structure that is used to store a plurality of PRBS generator definitions.

Conclusion

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of the art with respect to pseudorandom noise generator selection:

U.S. Pat. No. 5,761,216 to Sotome et al.

U.S. Pat. No. 6,201,870 to Medard et al.


U.S. Pat. No. 6,044,276 to Goldberg et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan S Chen whose telephone number is 703-605-0708. The examiner can normally be reached on M-F 8:30am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey A Gaffin can be reached on 703-308-3301. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

ASC
12/16/2003


JEFFREY GAFFIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100